

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

- Claim 1 (currently amended): A method for sensing position of a tape head in a tape drive comprising:
- generating light;
 - eclipsing in a tapered manner an amount of the light according to a position of the tape head;
 - sensing the amount of light not eclipsed; and
 - inferring position of the tape head according to the sensed amount of light.
- Claim 2 (currently amended): The method of Claim 1 wherein eclipsing the light comprises monotonically blocking an amount of light ~~according to position~~.
- Claim 3 (original): The method of Claim 1 wherein sensing the amount of light comprises:
- receiving a non-eclipsed portion of the light; and
 - converting the non-eclipsed portion of the light to an electrical signal.
- Claim 4 (original): The method of Claim 1 wherein inferring position comprises:
- receiving an indication of an amount of non-eclipsed light; and
 - conforming the electrical signal to a position function.
- Claim 5 (original): The method of Claim 4 wherein conforming the electrical signal comprises applying a linearity function to the signal.
- Claim 6 (original): The method of Claim 4 wherein conforming the electrical signal comprises applying a segmented position function.

Claim 7 (currently amended): An apparatus for sensing position of a tape head comprising:

light source that generates light;
eclipsing device that eclipses light in a tapered manner according to a position of the tape head;
light sensor that senses the amount of light not eclipsed; and
position unit that infers position of the tape head according to the sensed amount of light.

Claim 8 (original): The apparatus of Claim 7 wherein the eclipsing device is capable of monotonically blocking an amount of light according to position.

Claim 9 (original): The apparatus of Claim 7 wherein the light sensor is capable of:

receiving a non-eclipsed portion of the light; and
converting the non-eclipsed portion of the light to an electrical signal.

Claim 10 (original): The apparatus of Claim 7 wherein the position unit is capable of:

receiving an electrical signal indicative of the amount of non-eclipsed light; and
conforming the electrical signal to a position function.

Claim 11 (original): The apparatus of Claim 10 wherein the position unit conforms the electrical signal by applying a linearity function to the signal.

Claim 12 (original): The apparatus of Claim 7 wherein the position unit is capable of conforming the electrical signal to a segmented position function.

Claim 13 (currently amended): A tape drive comprising:

tape transport mechanism for transporting magnetic tape;
tape head;
actuator assembly capable of positioning the tape head;
optical position sensor mechanism having a tapered light eclipsing response that generates a position signal according to the position of the tape head; and

position controller that controls the actuator assembly according to the position signal.

Claim 14 (original): The tape drive of Claim 13 wherein the optical position sensor mechanism comprises:

light-source that generates light;
flag that eclipses light according to the position of the tape head; and
detector that senses the amount of light not eclipsed.

Claim 15 (original): The tape drive of Claim 14 wherein the light source comprises a light emitting diode.

Claim 16 (original): The tape drive of Claim 14 wherein the flag comprises a tapered slot for monotonically blocking an amount of light according to the position of the tape head.

Claim 17 (original): The tape drive of Claim 14 wherein the detector comprises a photodiode.

Claim 18 (original): The tape drive of Claim 14 wherein the position controller is capable of:

receiving an electrical signal indicative of the amount of light sensed by the detector; and
conforming the electrical signal to a position function.

Claim 19 (original): The tape drive of Claim 14 wherein the position controller comprises:

processor for executing an instruction sequence;
program memory; and
position function conformer instruction sequence that is stored in the program memory.

Claim 20 (original): The tape drive of Claim 14 wherein the light source and the detector are collectively housed in opposition to each other.